
Digital Day&Night Dome Camera

Instruction Guide



Model# DNDC540 & DNDC540DV

www.PelikanCam.com

■ Features

Horizontal Resolution of 540 TV Lines

Clear image quality has been achieved by employing a SONY CCD with 410,000 (effective) pixels, which provides a horizontal resolution of 540 TV lines.

DAY & NIGHT

This camera has a function that automatically selects the mode that is appropriate for daytime or night-time conditions. The COLOR mode operates in daytime conditions to provide optimum colors, and BW mode operates in night-time conditions to enhance the definition of the image.

Electronic IRIS

The electronic IRIS function enables continuous automatic control of the shutter between 1/60~1/120,000 seconds.

PRIVACY Function

The PRIVACY function conceals the areas not required to appear on the image.

3 Axis built-in 120mm Dome Housing

High Sensitivity

The built-in high sensitivity SONY COLOR CCD enables a clear image even in 0.3Lux(0.1Lux B/W) or as low as 0.002Lux with SENS-UP.

DNR (Digital Noise Reduction)

The amount of low illuminance noise has been significantly reduced, and the signal-to-noise ratio (S/N ratio) as well as horizontal resolution have been improved, resulting in clear and sharp images displayed even in low light.

Controlled by OSD Menu

The camera functions are controlled by selecting text displayed on the monitor screen.

Additional Functions

SENS-UP, MOTION DETECTION, MIRROR, SHARPNESS and SYNC (INT/LL) functions are also available.

Warning ■

The camera requires periodic inspection.

Contact an authorised technician to carry out the inspection.

Stop using your camera when you find it malfunctioning.

If the camera emits smoke or is unusually hot for a long period, a fire may be caused.

Do not install the camera on a surface that can not support it.

If the camera is installed on an inappropriate surface, it may fall and cause injury.

Do not hold plug with wet hands.

It could cause an electric shock.

Do not dis-assemble the camera.

It may result in an electric shock or other hazards.

Do not use the camera close to a gas or oil leak.

It may result in a fire or other hazards.

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■ Precautions

Do not install the camera in extreme temperature conditions.



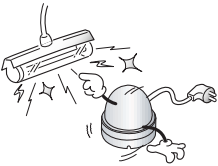
Only use the camera under conditions where temperatures are between -10°C and +50°C. Be especially careful to provide ventilation when operating under high temperatures.

Do not install or use the camera in an environment where the humidity is high.



It can cause the image quality to be poor.

Do not install the camera under unstable lighting conditions.



Severe lighting change or flicker can cause the camera to work improperly.

Do not touch the front lens of the camera.



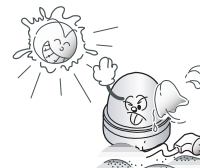
This is one of the most important parts of the camera. Be careful not to leave fingerprints on the lens cover.

Do not drop the camera or protect it from physical shocks.



It can cause malfunctions to occur.

Never keep the camera pointed directly at strong light.



It can damage the CCD.

Do not expose the camera to rain or spill beverage on it.



If it gets wet, wipe it dry immediately. Liquids can contain minerals that corrode the electronic components.

Do not expose the camera to radioactivity.



If exposed to radioactivity the CCD will fail.

Note

- If the camera is exposed to spotlight or object reflecting strong light, smear or blooming may occur.
- Please check that the power satisfies the normal specification before connecting the camera.

■ Components

1. COLOR DOME CAMERA



2. SCREWS



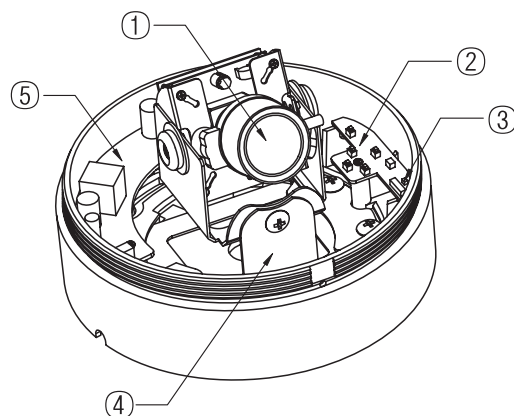
3. WIRE FOR VBS-EXTRA



4. INSTRUCTION GUIDE



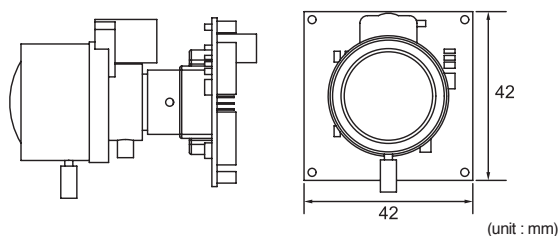
Names and Functions of Parts ■



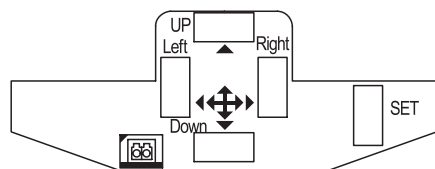
Names and Functions of Parts

① LENS : Vari-Focal DC Auto Iris Lens

(2.5mm~6.0mm / F1.2, 3.8mm~9.5mm / F1.2
2.9mm~10.0mm / F1.2, 4.0mm~9.0mm / F1.5)



② OSD PCB



● **SET button** : Used for the menu display. This button can be used to confirm settings after changing the value of the selected function or current conditions.

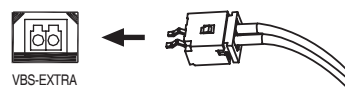
● **UP & DOWN buttons** : Used for selecting items by moving the cursor up or down on the menu screen.

● **LEFT & RIGHT buttons** : Used when changing item values, by moving the cursor to the left or right on the menu screen.

Names and Functions of Parts

③ VBS-EXTRA FOR CONNECTING TO LCD

Please use the supplied wire when connecting to LCD

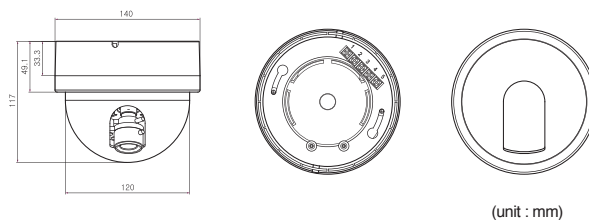


④ 3 AXIS BRACKET

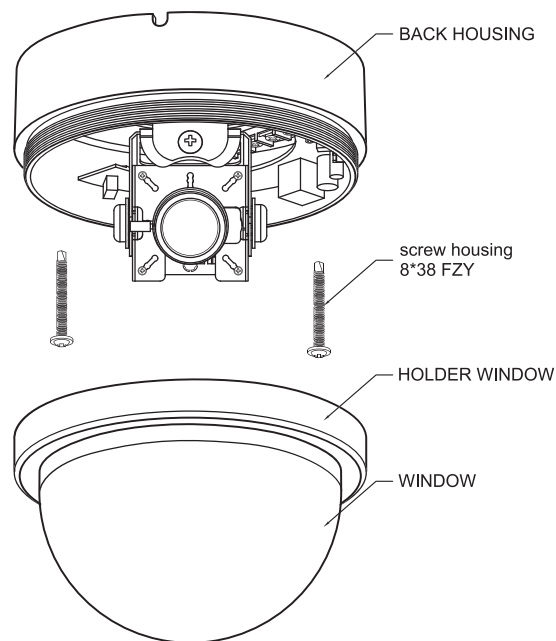
Please loosen screws and fix tilted and panned position.

⑤ SMPS PCB FOR DUAL POWER

Dimensions



■ Installation



1. Dome Base Mounting

- Open the dome cover by loosening 3 screws using special wrench provided.
- Mount the base of camera to a sturdy surface using 4 screws (1.5 inch) and 4 premade holes on the base of the dome.

2. Power Connect & Monitor Impedance

- DC12V/300mA regulated power supply (DC12V only)
- AC24V Class 2 power supply (AC24V/DC12V)
- To avoid fire or shock hazard, must use a UL listed power supply.
- Set the monitor impedance switch to 75Ω. Check the impedance switch when the screen turns blurred.

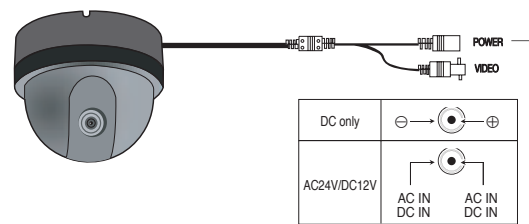
3. Camera Module Adjustment

- Loosen screws for 3-axis camera bracket and adjust the direction and angle of camera.
- Make sure to retighten the screws for camera bracket.
- Set any function you wish to activate by using the OSD buttons.

4. Dome Cover Mounting

- Replace the dome cover to the base and tighten 3 screws.

Cable Connections ■



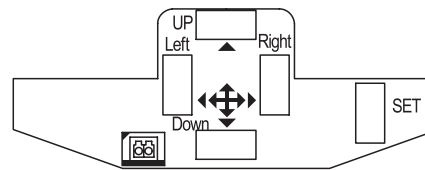
■ Camera Operation

■ Menu

SETUP menu	
LENS (selection)	• MANUAL • DC
SHUTTER (condition and speed control)	• ESC • MANUAL • FLK
WHITE BALANCE control	• ATW • AWC • MANUAL
BACKLIGHT (Backlight Compensation)	• OFF • LOW • MIDDLE • HIGH
AGC (Auto Gain Control)	• OFF • LOW • MIDDLE • HIGH
DNR (Digital Noise Reduction)	• OFF • LOW • MIDDLE • HIGH
SENS-UP (Low illuminance)	• OFF • AUTO
SPECIAL	• CAMERA ID • COLOR • SYNC • MOTION DETECTION • PRIVACY • MIRROR • SHARPNESS • RESET • RETURN
EXIT	

■ Settings

Settings can be made using the 5 buttons located in the camera.



1. Press the SET button

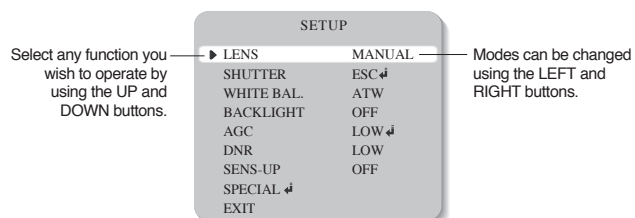
- Settings can now be made. The SETUP menu is displayed on the monitor.

SETUP	
► LENS	MANUAL
SHUTTER	ESC ↕
WHITE BAL.	ATW
BACKLIGHT	OFF
AGC	LOW ↕
DNR	LOW
SENS-UP	OFF
SPECIAL ↕	
EXIT	

2. Select a menu item from the list available by using the UP and DOWN buttons.

- The cursor can be moved up or down by using the UP and DOWN buttons. Position the cursor to point to the function requiring adjustment.


■ Camera Operation



3. When the LEFT or RIGHT button is pressed, available values and modes are displayed in order. Keep pressing the button until you get to the mode you wish to select.

4. Select 'EXIT' and then press the SET button to exit the set up Menu.

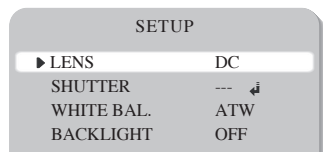
Note

- If  appears at the mode you wish to operate, it means that there is a sub-menu which can be selected by pressing the SET button.
- If --- appears at the mode item, it means that there is no mode available to be selected.

LENS (selection)

This function is used to adjust the brightness of the screen.

1. When the SETUP menu is displayed on the screen, position the cursor to point to 'LENS' by using the UP and DOWN buttons.
2. Select the type of the lens setting to use by pressing the LEFT or RIGHT button.

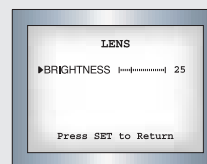


➤ **MANUAL** : Manual Lens selection

➤ **DC** : Auto Iris Lens selection

Note

- The brightness of the screen can be adjusted in DC mode. The brightness can be adjusted within the range of 1 ~ 70. The optimum level of brightness for the user can be achieved by adjustment.
- If you select the MANUAL mode, it can be adjusted in ESC mode.



3. Press the SET button if you wish to return to the previous menu

■ Camera Operation

SHUTTER (condition and speed control)

Auto or manual control can be selected.

1. When the SETUP menu is on the screen, position the cursor to point to 'SHUTTER' by using the UP and DOWN buttons.
2. Select the shutter mode by pressing the LEFT or RIGHT button.

- **FLK** : Select 'FLK' mode when flickering occurs on the screen due to an imbalance between illumination and frequency.
NTSC Model: 1/100, PAL Model: 1/120
- **ESC** : Auto control of the shutter speed is enabled.
When ESC mode is on, the shutter speed is controlled automatically according to the brightness of the scene.
- **MANUAL** : The shutter speed can be controlled manually.

SETUP	
LENS	MANUAL
▶ SHUTTER	ESC ↕
WHITEBAL	ATW
BACKLIGHT	OFF

3. Select 'MANUAL' mode for manual shutter speed adjustment.
 - Selectable speeds are from '1/60' to '1/120,000'sec (NTSC) and 1/50i to '1/120,000'sec (PAL).
4. Press the SET button when the settings are completed.



Note

- While using the internal synchronous system, if the shutter setting is on 'ESC' and the camera is directly facing bright fluorescent lights the image on the screen can be adversely affected - therefore choose the installation location carefully.
- When 'MANUAL' mode is on, the SENS UP function cannot be used.

WHITE BALANCE control

The screen colours can be adjusted using the WHITE BALANCE function.

1. Position the cursor to point to 'WHITE BAL' on the SETUP menu by using the UP and DOWN buttons.
2. Select the mode you wish to adjust by pressing the LEFT or RIGHT buttons.

SETUP	
LENS	MANUAL
SHUTTER	ESC ↕
▶ WHITE BAL	ATW
BACKLIGHT	OFF

※ Select one of the 3 modes below.

- **ATW(Auto Tracking White Balance)** : This mode can be used within the colour temperature range 1,800°K ~ 10,500°K (eg, fluorescent light, outdoor, sodium vapour lamp etc.)
- **AWC(Auto White Balance Control)** : Press the SET button while the camera is directed at a piece of white paper to obtain the optimum state under current illumination. If the environment, including the light source, changes the white balance will need to be adjusted again.
- **MANUAL** : The manual adjustment mode enables finer adjustment.
Select ATW or AWC first then change to manual adjustment mode and press the SET button. Set the appropriate colour temperature then increase / decrease the red and blue colour values and monitor the colour changes of the object.



Note

- Under the following conditions the WHITE BALANCE function may not operate properly. In such cases, please select the AWC mode.
 - ① When the object's surroundings have a very high colour temperature (eg, a clear sky and sunset)
 - ② When the object's surroundings are dark
 - ③ If the camera directly faces a fluorescent light or is installed in a place where there are considerable changes in illumination, the WHITE BALANCE function may become unstable.

■ Camera Operation

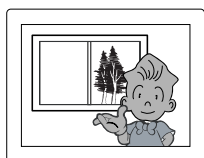
BLC (Back Light Compensation)

When there is a strong backlight behind the object, clear images of the background as well as the object can still be obtained by using the BACKLIGHT function.

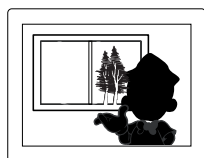
1. Position the cursor to point to 'BACKLIGHT' on the SETUP menu by using the UP and DOWN buttons.
2. Select the value required by pressing the LEFT or RIGHT button.

SETUP	
LENS	MANUAL
SHUTTER	ESC ↵
WHITE BAL.	ATW
▶ BACKLIGHT	OFF
AGC	LOW ↵
DNR	LOW

- ⦿ **HIGH** : The gain increases from 0dB up to 42dB.
- ⦿ **MIDDLE** : The gain increases from 0dB up to 30dB.
- ⦿ **LOW** : The gain increases from 0dB up to 18dB.
- ⦿ **OFF** : BACKLIGHT function does not operate.



BACKLIGHT ON



BACKLIGHT OFF

AGC (Auto Gain Control)

1. Position the cursor to point to 'AGC' on the SETUP menu by using the UP and DOWN buttons.
2. Select the value required by pressing the LEFT or RIGHT button. As the level of gain increases the screen gets brighter but the level of noise will also increase.

- ⦿ **HIGH** : The gain varies between the range of 6dB ~ 42dB.
- ⦿ **MIDDLE** : The gain varies between the range of 6dB ~ 30dB.
- ⦿ **LOW** : The gain varies between the range of 6dB ~ 18dB.
- ⦿ **OFF** : The gain is fixed at 6dB.

SETUP	
LENS	MANUAL
SHUTTER	ESC ↵
WHITE BAL.	ATW
BACKLIGHT	OFF
▶ AGC	LOW ↵
DNR	LOW
SENS-UP	OFF
SPECIAL ↵	
EXIT	

■ Camera Operation

DNR (Digital Noise Reduction)

The level of background noise in low light decreases automatically as the level of gain changes.

1. Position the cursor to point to 'DNR' on the SETUP menu by using the UP and DOWN buttons.
2. Select the value required by pressing the LEFT or RIGHT button.

SETUP	
LENS	MANUAL
SHUTTER	ESC ↵
WHITE BAL.	ATW
BACKLIGHT	OFF
AGC	LOW ↵
▶ DNR	LOW
SENS-UP	OFF
SPECIAL	

- ⦿ **OFF** : There is no reduction in noise level.
- ⦿ **LOW** : There is a small reduction in noise level with almost no ghost image.
- ⦿ **MIDDLE** : The most effective mode. There is a sufficient reduction in noise levels without causing significant ghosting.
- ⦿ **HIGH** : The level of noise is reduced greatly, however there is an increase in ghosting.

Note

- When AGC is turned off, DNR does not operate.

SENS UP (Low Illuminance)

SENS UP helps maintain a bright, clear screen image by automatically detecting changes in the level of light in low light level conditions.

1. Position the arrow to point to 'SENS UP' on the SETUP menu by using the UP and DOWN buttons.
2. Select the value required by pressing the LEFT or RIGHT button.

- ⦿ **AUTO** : Low light level automatic mode.
- ⦿ **OFF** : The function does not operate.

Note

- When SHUTTER is in the manual or flk mode, SENS UP does not operate.
- When AGC is turned off, SENS UP does not operate.

SETUP	
LENS	MANUAL
SHUTTER	ESC ↵
WHITE BAL.	ATW
BACKLIGHT	OFF
AGC	LOW ↵
DNR	LOW
▶ SENS-UP	OFF
SPECIAL ↵	
EXIT	

3. Press the SET button when all the settings are complete.

Note

- The maximum storage magnification in low light level movement situations can be adjusted by pressing the SET button in 'AUTO' mode.(X2~X128)
- As the magnification increases the screen gets brighter; however the after image also increases.
- If storage magnification is increased while SENS UP is operational, it may cause noise and spots may appear; this is normal.

■ Camera Operation

SPECIAL

1. Position the cursor to point to 'SPECIAL' on the SETUP menu by using the UP and DOWN buttons.
2. Select the mode required by pressing the UP or DOWN button.

SPECIAL	
▶ CAMERA ID	OFF
COLOR	ON
SYNC	INT
MOTION DET	OFF
PRIVACY	OFF
MIRROR	OFF
SHARPNESS	ON ↵
RESET	
RETURN	

Ⓢ **CAMERA ID** : If an ID is input, this camera ID appears on the monitor and recorded footage.

- 1) Position the cursor to point to 'CAMERA ID' by using the UP or DOWN button.
- 2) Select 'ON' by pressing the LEFT or RIGHT button.

Note

- If 'OFF' is selected, the ID does not appear on the monitor even if it has been input.

SPECIAL	
▶ CAMERA ID	OFF
COLOR	ON
SYNC	INT
MOTION DET	OFF
PRIVACY	OFF
MIRROR	OFF
SHARPNESS	ON ↵
RESET	
RETURN	

- 3) Press the SET button.

Camera ID	
A B C D E F G H I J K L M	
N O P Q R S T U V W X Y Z	
a b c d e f g h i j k l m	
n o p q r s t u v w x y z	
- . 0 1 2 3 4 5 6 7 8 9	
←→ CLR POS END	

- 4) Up to 15 characters can be used for the camera ID.

- ① Move the cursor to the letter required by using the UP and DOWN button.

Camera ID	
A B C D E F G H I J K L M	
N O P Q R S T U V W X Y Z	
a b c d e f g h i j k l m	
n o p q r s t u v w x y z	
- . 0 1 2 3 4 5 6 7 8 9	
←→ CLR POS END	

- ② Select an ID from A,B~Y,Z, a,b~y,z, 0,1~8,9 by using the UP, DOWN, LEFT and RIGHT buttons.
- ③ Lock in the characters by using the SET button.
 - Once locked in the cursor moves to the next space in the ID.
- ④ Repeat the above steps until the ID is complete.

Note

- If the wrong name has been input....

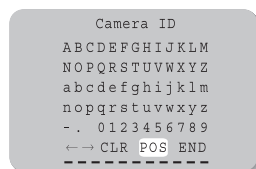
Press the SET button after moving the cursor to CLR and all the letters will be erased. If you want to correct a letter move the cursor to the arrow at the bottom left of the screen and press 'SET'.

Position the cursor above the letter you wish to correct and then move the cursor onto the letter you wish to choose and press the SET button.

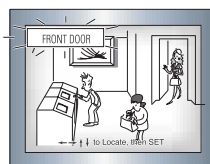
■ Camera Operation

5) When the camera ID is complete, select a position for the name to be displayed.

① Move the cursor onto 'POS' and then press the SET button.



② The ID will appear in the top left corner.



③ Select the position where the ID is to be displayed by using the 4 directional buttons, and then press the SET button.



6) Select 'END' and press the SET button to complete ID input.

● COLOR

- AUTO : This camera has an IR Cut Filter and automatically changes to the appropriate mode dependant on lighting levels. COLOR mode is selected during daylight and B/W mode at night time.
- ON : The color mode is selected by default, and the modes do not change automatically.

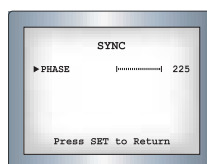


Note

- When the AGC is turned off, COLOR does not operate.
- When an infrared light is used, there may be a problem with focusing.

● SYNC : Two synchronisation modes are available, INTERNAL and EXTERNAL LINE-LOCK. In LINE-LOCK mode, it synchronises the video signal between cameras without a synchronous generator. The line-lock synchronisation is only used in areas of 60Hz (NTSC Models) / 50Hz (PAL Models).

- INT : Internal synchronisation
- LL : External line-lock synchronisation
- If 'LL' is selected, it can be adjusted to the desired phase. Press the SET button.
- Adjust to the desired phase from 0 to 359.



Note

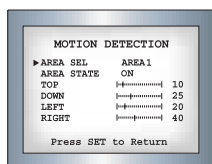
- When the mains frequency is 50Hz, the line-lock mode (NTSC Models) cannot be used.
- When the mains frequency is 60Hz, the line-lock mode (PAL Models) cannot be used.

■ Camera Operation

● MOTION DETECTION:

This product has a feature that allows you to observe movements of objects in 4 different areas on the screen, and the words 'MOTION DETECTED' appear on the screen when movement is detected; hence a single individual can conduct supervision efficiently. The camera detects an object's movement by sensing disparity of outline, and level of brightness and color.

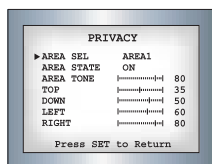
- Please press the SET button.
- OFF : MOTION DETECTION mode is cancelled.
- ON : Any motion in the selected areas is observed.
- Please select the area you wish to observe from the 4 areas in AREA SEL mode.
- Please select ON mode for the chosen area.
- Please adjust the size of the area to be observed by using the UP, DOWN, LEFT or RIGHT button.



- Please press the SET button to save the changes and complete the setting.

● PRIVACY : This mode conceals the areas you do not wish to appear on the screen.

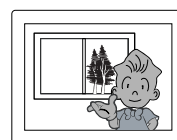
- OFF : Cancels the PRIVACY mode.
- ON : Operates the PRIVACY mode.
- Please press the SET button.



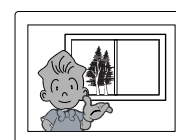
- Please select the area you do not wish to appear from the 4 areas in AREA SEL mode.
- Please select ON mode for the chosen area.
- Please adjust the size of the area to be concealed by using the UP, DOWN, LEFT or RIGHT button.

● MIRROR

- ON : Sets a horizontal image inversion.
- OFF : Cancels the inversion.



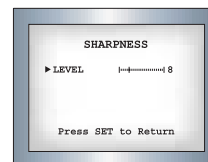
MIRROR ON



MIRROR OFF

- SHARPNESS : The outline of the video image becomes cleaner and more distinctive as the level of SHARPNESS increases. If the level goes up excessively, however, it may affect the video image and generate noise.

- Please press the SETUP button.



- The available range of level is 0 ~ 31.

- RESET : Returns to the level which was set by the manufacturer for shipment.
- RETURN : Saves the SPECIAL menu and returns to the SETUP menu.

EXIT

Saves all the setting menus and then exits.

■ Troubleshooting

If there are problems with the camera operation, check the tables below. If the problem persists, please contact the agent who supplied the product.

Problems	Troubleshooting
Nothing appears on the screen.	<ul style="list-style-type: none"> • Check the power connection. • Check the video signal line connection.
The video image is not clear.	<ul style="list-style-type: none"> • Make sure that the lens is clean. Clean the lens with a clean lint free cloth or brush. • Adjust the contrast control on the monitor. • Make sure that the screen is not exposed directly to a bright light. Re-position the camera if necessary.
The screen is dark.	<ul style="list-style-type: none"> • Adjust the contrast control of the monitor. • If there is an intermediate device, set the 75ohm Hi-z correctly, and also check the connections. • If necessary, adjust the brightness level.
There is a problem with the camera operation. The camera surface is too hot and black stripes appear on the screen.	<ul style="list-style-type: none"> • Check if an appropriate power source to the camera complies with the manufacturer's standard requirement, or if the voltage is fluctuating. Check for ground loops.

Problems	Troubleshooting
The MOTION DETECTION function is not working.	<ul style="list-style-type: none"> • Check if 'MOTION DETECTION' mode is turned on. • Check the setting of the MD AREA.
Colors are not quite right.	<ul style="list-style-type: none"> • Check the 'WHITE BAL' setting. (Please refer to page 19)
The screen is flickering.	<ul style="list-style-type: none"> • Check if the camera is facing directly into sunlight or fluorescent light.
L/L mode isn't able to be selected.	<ul style="list-style-type: none"> • Have you connected your camera to DC power source? Connect it to AC power source.
L/L mode is not available.	<ul style="list-style-type: none"> • Check the frequency of power supply (60Hz for NTSC, 50Hz for PAL).
COLOR mode is not working.	<ul style="list-style-type: none"> • Check if the AGC menu is set to the OFF position.
SENS-UP function is not working.	<ul style="list-style-type: none"> • Check if the AGC menu is set to the OFF position. • Check if the SHUTTER menu is set to MANUAL mode.

■ Specifications

ITEM		NTSC		PAL	
Power Source		AC24V / DC12V	DC12V	AC24V / DC12V	DC12V
		215mA(AC24V)/250mA(DC12V)	160mA	215mA(AC24V)/250mA(DC12V)	160mA
C C D	Total Pixels	811(H) x 508(V)		795(H) x 596(V)	
	Effective Pixels	768(H) x 494(V)		752(H) x 582(V)	
	Size	1/3 inch interline transfer CCD			
	Scanning System	2:1 Interlace			
s y n c	Synchronization	INT/LL Selectable 0~359°(Adjustable)	INT	INT/LL Selectable 0~359°(Adjustable)	INT
	Frequency	Horizontal:15.734 KHz Vertical :59.94 Hz		Horizontal: 15.625 KHz Vertical : 50.00 Hz	
E L E C T R I C A L	Resolution	540 TV Lines			
	Video Output	1.0Vp-p/75(Video 0.714Vp-p Sync 0.286Vp-p)		1.0Vp-p/75 (Video 0.7 Vp-p Sync 0.3 Vp-p)	
	S/N (Y signal)	50dB (AGC Off)			
	Min. Illumination	0.3Lux/F1.2(Color), 0.1Lux/F1.2(B/W), 0.002Lux(Sens-up)			
	Gain Control	OFF / LOW / MIDDLE / HIGH			
	White Balance	ATW / AWC / MANUAL(1,800°K~10,500°K)			
	Electronic Shutter Speed	AUTO / MANUAL(1/60~1/120,000)		AUTO / MANUAL(1/50~1/120,000)	
	Sens-Up	OFF / AUTO			
	O.S.D	Built-in			
	Motion Detection	ON / OFF (4 Programmable Zone)			
	DNR	OFF / LOW / MIDDLE / HIGH(Noise Reduction)			
Mirror	Built-in (Horizontal Image Inversion)				
Privacy Function	ON / OFF (4 Programmable Zone)				
Operating Temperature/Humidity		-10°C ~ +50°C / 30 ~ 90% RH			
Weight		630g			